

The PLANTS Web Site: Understanding Its Basic Functionality

<<http://plants.usda.gov>>

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A. Searching for a Plant Name: This can be done through two primary avenues: 1) **PLANTS name search** and 2) **Checklists & Searches**. Both of these are accessible for the PLANTS Home Page. **The Checklists & Searches** are located in the “Plant topics” box on the left side of the Home Page.

1) PLANTS Name Search

The “**PLANTS name search**” is located on the PLANTS Home Page, just below the green bar at the top of the page. Note that you have to select the entity (Common Name,



Scientific Name, or Symbol) for which you are searching from the “drop-down” box to inform the database about what you are inputting. This is a “String search,” and will return anything that matches in the field (ex. inputting *Cryptantha* as a Scientific Name will bring back all of the species in the genus *Cryptantha*, plus the species *Phacelia cryptantha* and *Castilleja cryptantha*).

Once you have a returned list, you can search through the list for the name for which you are looking, then click on the “hot” scientific name to bring back that plant’s Plant Profile.

Common Names

Currently in PLANTS, each plant species is designated by only 1 common name.

| Search for | Returns |
|---------------------|--|
| Western wheatgrass | Plant Profile for <i>Pascopyrum smithii</i> |
| Western wheat grass | No data found, because it isn't spelled the same as the name in the database; try searching on “western” or “wheat.” |
| bluejoint | List of <i>Calamagrostis</i> species |
| wheatgrass | List of common names that contain “wheatgrass”. |

Scientific Names

| Search for | Returns |
|---------------------------------|--|
| Pascopyrum smithii | Plant Profile for <i>Pascopyrum smithii</i> |
| Pascoyprum | List of current names and synonyms that contain "Pascopyrum" |
| Elymus | List of current names and synonyms that contain "Elymus" |
| Elymus elymoides | List of current names and synonyms that contain "Elymus elymoides" |
| Elymum elymoides ssp. elymoides | Plant Profile for <i>Elymum elymoides</i> ssp. <i>elymoides</i> |

Symbols

Each Latin binomial and trinomial is assigned a unique symbol. The symbol for a binomial consists of the first two letters of the genus, plus the first two letters of the specific epithet. For example the symbol for *Pascopyrum smithii* is PASM. Duplicates of 4 letter symbols are differentiated by adding a number as tie-breaking suffix. For example the symbol for *Elymus elymoides* is not ELEM but ELEM5. The symbol for a trinomial consists of the first two letters of the genus, plus the first two letters of the specific epithet, plus the first letter of the subspecific or varietal epithet. For example the symbol for *Elymus elymoides* ssp. *elymoides* is ELEM5. Tie-breaking numbers are used here for differentiating duplicative letter combinations.

If you are unsure about the spelling of a scientific name or you desire a fast input for a return list, a symbol can be helpful.

| Search for | Returns |
|------------|---|
| PASM | List of symbols including symbols of synonyms that contain PASM |
| ELEM | List of symbols including symbols of synonyms that contain ELEM |
| ELEM5 | Plant Profile for <i>Elymus elymoides</i> |

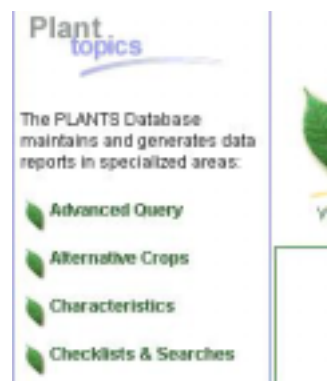
Synonyms

A search for the Scientific Name, *Agropyron smithii*, which is a synonym of *Pascopyrum smithii*, returns the Plant Profile for *Pascopyrum smithii*.

2) Checklists & Searches

Users can access the exact search by clicking [Checklists & Searches](#) on the Home Page. You can search on [Scientific Name](#), [Common Name](#), [Symbol](#), [Family](#), and [Genus](#). You can also filter this search by selecting one or more states, if desired. The output can also be sorted by [Scientific Name](#), [Common Name](#), or [Symbol](#). The [Scientific Name](#) is default.

This is not a "string search." It searches for an exact match in the field that you select. If you search the [Scientific Name](#) for *Cryptantha*, the system will return the Plant



Profile for the genus *Cryptantha*. If you search for the Genus *Elymus*, the system will return all of the names (including synonyms and their respective accepted names) containing the genus *Elymus*.

Common names

| Search for | Returns |
|--------------------|--|
| western wheatgrass | Plant Profile for <i>Pascopyrum smithii</i> |
| wheatgrass | List of species with common name wheatgrass. |
| *wheatgrass | List of species with multiple characters to the left of wheatgrass. |
| *wheatgrass* | List of species with multiple characters to the left and to the right of wheatgrass. |

* The asterisk is a wild card that instructs PLANTS to include multiple characters.

Scientific name

A search for *Pascopyrum smithii* returns the Plant Profile for *Pascopyrum smithii*.

If you are working from a source which has a one or two letter misspelling, such as *Pascopyrun smithii*, when you enter it, PLANTS will return **No Data Found**. You might try <Pascopy*>, which will return a list of species which have multiple characters to the right of <Pascopy>, which includes *Pascopyrum smithii*. Also, you could search using the symbol.

 **Search the PLANTS database** by Scientific Name, Common Name, Symbol, Family, Genus, and/or State. This yields a fully synchronized checklist (with all synonyms shown).

Scientific Name
 Common Name
 Symbol
 Family
 Genus

Wild cards are permitted: * for multiple characters and _ for single characters.

After your search by clicking the link next to the geographic area below, multiple results may be checked. The names are checked, all geographic areas in the database are searched.

☐ Alabama
☐ Arizona
☐ New Mexico
☐ Virginia

Symbol

A search for PASM returns the Plant Profile for *Pascopyrum smithii*.

If you use TRDA to search for *Tripsacum dactyloides*, it returns *Trichomanes davallioides* instead, since TRDA is the symbol for that name and it is a direct match. You may want to use the [PLANTS name search](#) or search for TRDA*, and *Tripsacum dactyloides* will be included in the returned list.

Genus

Returns a list of all plant species in a genus, including hybrids, the genus name, and all rankings below, plus synonyms. Example: *Elymus*.

[illegible]

State

Returns a list of all plants from genus downward that have been reported to occur in the selected state.

Unknown Codes

The Unknown Codes are standardized codes for general descriptions of land/vegetation survey points that surveyors are unable describe with precision. Federal agencies have adopted these codes. To view these codes: In **Checklists & Searches** click **Symbol**, enter **2***, click **Display Results**.



B. Plant Profile

The Plant Profile is the primary access point for information on a particular plant. There is a Plant Profile for every taxon in PLANTS. Some plants have more information than other, but all have a profile. All information for a taxon is available from that profile. When you click on most “hot” names produced in various lists within PLANTS, you will go directly to the Plant Profile for that taxon. Other products, such as Plant Guides will be accessible from that profile.

Example: Inputting the symbol ACHY for *Achnatherum hymenoides* (Indian ricegrass) or HYCA for *Hydrastis canadensis* (goldenseal) returns the Plant Profile. You can also just click on the Plant of the Week on the Home Page to view a Plant Profile.

The Plant Profile is designed to provide the user with access to information pertaining to that taxon.

Plant Profile: The topmost box (shown here) provides you with some basic attributes about the taxon, plus an image, if one is available on PLANTS.



Note that the attribute **Growth Habit** is hot and you can click this to bring up a window containing definitions.

Note also that in the lower left corner of the topmost box, you have access to a **Printer-Friendly Version** of the Plant Profile.

The green bar at the base of this box that provides quick access to lower parts of the Plant Profile. If a particular section isn't pertinent, it is not highlighted in yellow.

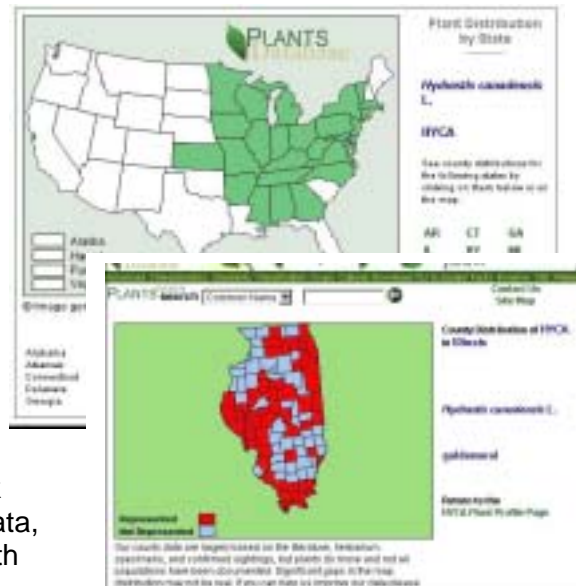
Plant Synonyms and Plant Photographs (if pertinent to or available for the selected taxon): The second and/or third boxes will contain



Synonyms and Plant Photographs and be displayed above the distribution map. The Plant Photographs box will also provide access to all images of that particular genus if available in PLANTS, including publication quality sized images. Thousands of line drawings are also available.

Plant Distribution: A large map displays the distribution as is currently known from specimens and the scientific literature. State level presence data are displayed as green. AK, HI, PR, and VI are represented by boxes below and left of the map.

If county level data are available, it is represented by the state abbreviations to the right of the map. You can click on the postal code or as you run your cursor over the map, your cursor will change to a hand for the states with underlying county data. For those states with “off-site” county data, this is noted by an asterisk next to the state abbreviation. For off-site data, a new browser window will be brought up with the distant site in it.



Related Taxa: Provides quick access to related taxa, either genera in the same family or species in the same genus.

Classification: Provides quick access to various levels of the taxon's classification tree. Click on any of the highlighted levels.

Noxious Weed Information (if pertinent): Indicates if the plant is considered noxious by Federal or state governments, plus provides access to further information on the entities noxious weed list.

Invasive Information (if pertinent): If the plant has been noted as having invasive qualities in certain situations or environments by the sources integrated into PLANTS, then it will be indicated here and the citations are made available for further information. Depending upon the use that is being made of the plant, invasiveness could be a positive or negative value.

Introduced Information (if pertinent): If the plant is introduced into the U.S. (including PR and VI), it will be noted by the presence of this box.

Wetlands Indicator Status (if pertinent): If the plant has been classified by the USFWS as having wetland indicator status, the regional and national indicator status is shown.

| | |
|--|---|
| <p>Related Taxa: <i>Hydrastis canadensis</i> L.</p> <p>View 26 genera in Ranunculaceae, 1 species in <i>Hydrastis</i></p> <p>Back to Top</p> | |
| <p>Classification: <i>Hydrastis canadensis</i> L.</p> <p>Click on a scientific name below to expand it in the PLANTS Classification Report.</p> | |
| Kingdom | Plantae - Plants |
| Subkingdom | Tracheobionta - Vascular plants |
| Superdivision | Spermatophytes - Seed plants |
| Division | Magnoliopsida - Flowering plants |
| Class | Magnoliopsida - Dicotyledons |
| Subclass | Magnoliidae - |
| Order | Ranunculales - |
| Family | Ranunculaceae - Buttercup family |
| Genus | <i>Hydrastis</i> L. - <i>Hydrastis</i> |
| Species | <i>Hydrastis canadensis</i> L. - <i>goldenrod</i> |

Other Species Accounts and Images:
[Hydrocotyle cuneata](#) L.

[View species account and distribution map from Flora of North America \(FNA\)](#)
[View species account from RUS European Resources Information Network \(ERIN\)](#)
[View species account from Integrated Taxonomic Information System \(ITIS\)](#) (ITIS Serial Number 18781)
[View species account or photographs from Missouri State Herbarium, J.W. Moench](#)

Edited Web Sites:
***Hydrastis canadensis* L.**

IL: [Wildflowers of Illinois](#)
CT: [Connecticut Botanical Society](#)
GA: [University of Georgia Image](#)
Herbaria: [Herbaria of the World](#)
NY: [New York Botanical Garden](#)
ND: [ND-MDG Plant Finder](#)
NC: [Procaroliniana Plants of North Carolina](#)
NY: [NY State Museum](#)
National Center for the Preservation of Medicinal Herbs
US: [Purple Sage Medical Herbs and Other Herbs](#)

Plant Characteristics

Plant Classification

Plant Fact Sheet and Plant Guides




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[Links](#)
[Tools](#)

[Contact Us](#)
[Site Map](#)

Plant Guides and Fast Sheets

a partnership between the National Plant Data Center and the Plant Materials Program

Click on a doc or pdf link below to view a Plant Guide or Fast Sheet. Plant Guides provide brief descriptions of a plant, its uses, and cultural recommendations. Plant Guides are similar but more extensive.

[About Plant Guides and Fast Sheets](#)

[Examine the list of Fast Sheets and Plant Guides](#)

[View tagged by common name](#)

Plant Guides and Fast Sheets are available in other formats: Acrobat Portable Document Format (.pdf) or Microsoft Word 97 (.doc). You will need the Microsoft® Word® 97 program version 3.0 or higher to use .pdf, and/or downloaded Adobe Acrobat Reader from the Adobe website here.

| Accession | Scientific Name | Common Name | Accession | Plant Guide |
|-----------|--|-------------|---------------------|---------------------|
| 95030 | <i>Alnus incana</i> | blackgum | doc | pdf |
| 95030 | <i>Alnus canadensis</i> | white fir | doc | pdf |
| 95040 | <i>Alnus gracilis</i> | graygum | doc | pdf |
| 95040 | <i>Alnus incana</i> var. <i>pauciflora</i> | rust gum | doc | pdf |
| 95040 | <i>Alnus crispa</i> | gray maple | doc | pdf |
| 95040 | <i>Alnus gracilis</i> | gray maple | doc | pdf |
| 95040 | <i>Alnus glutinosa</i> | Black Birch | doc | pdf |
| 95040 | <i>Alnus incana</i> | blackgum | doc | pdf |
| 95040 | <i>Alnus crispa</i> | gray maple | doc | pdf |
| 95040 | <i>Alnus glutinosa</i> | blackgum | doc | pdf |
| 95040 | <i>Alnus crispa</i> | gray maple | doc | pdf |
| 95040 | <i>Alnus glutinosa</i> | blackgum | doc | pdf |
| 95040 | <i>Alnus crispa</i> | gray maple | doc | pdf |
| 95040 | <i>Alnus glutinosa</i> | blackgum | doc | pdf |
| 95040 | <i>Alnus crispa</i> | gray maple | doc | pdf |
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| 95040 | <i>Alnus glutinosa</i> | blackgum | doc | pdf |
| 95040 | <i>Alnus crispa</i> | gray maple | doc | pdf |
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| 95040 | <i>Alnus glutinosa</i> | blackgum | doc | pdf |
| 95040 | <i>Alnus crispa</i> | gray maple | doc | pdf |
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| 95040 | <i>Alnus crispa</i> | gray maple | doc | pdf |
| 95040 | <i>Alnus glutinosa</i> | blackgum | doc | pdf |
| 95040 | <i>Alnus crispa</i> | gray maple | doc | pdf |
| 95040 | <i>Alnus glutinosa</i> | blackgum | doc | |

Plant Source & References

C. Plant Topics

1. Advanced Query:

Caution: The main thing to remember is that you have the option to either display output to the screen or click on the link to bring up the Advanced Query screen that downloads only and doesn't display the results to the screen. Browsers cannot currently handle the

large and complex data sets that the Advanced Query is capable of generating. If you are doing anything except the simplest query, it is recommended that you click directly on the [Query the PLANTS database and download the results without display](#) link toward the top of the Advanced Query main page.

Users can filter plant species by the boundaries of any attribute or any combination of attributes in the PLANTS database, and then download this information to in an ASCII delimited file.

Examples:

- Plant species that occur in Arizona and are Graminoids (Grasses).
- Plant species that occur in Wyoming, are shrubs, will grow with 14 inches or less precipitation, and with a soil pH of 7.5 or greater.
- Plants species that occur in Arizona and have Plant Guides.

There are two classes of attributes with which you can filter:

Part A: PLANTS Core Data

Basic attributes that are defined for all plant species in the PLANTS database.

Part B: Characteristics Data

Attributes that are defined for only 2000+ important conservation plant species. If you select plants by any of attributes in Part B, you will limit your plant selection to the 2000 conservation plants.

Examples: Select and download the Arizona noxious weed list.



| Using Netscape | Using Explorer |
|--|--|
| Set attribute State Noxious Status = Arizona | Set attribute State Noxious Status = Arizona |
| Check Display in Report | Check Display in Report |
| Click Display Report Now | Click Display Report Now |
| Click Download This Information (at bottom of web page) | Click Download This Information (at bottom of web page) |
| Click File / Save As | Right click / Save Target As... |

Excerpts from [About the Advanced Query and Download](#) on the PLANTS Web site- Advanced Query main page.

- You must display a field if you want to be able to sort on it.
- Requests for too much information will tax our server, be slow to appear, and may overwhelm your browser. In the latter event, try downloading the information without displaying it first. This option is available from the second link on the Advanced Query main page.
- You can select more than one value within a field by using the Control Key
- "Any" in the query means that any values will be reported in the results; it is equivalent to "all".

2. Alternative Crops:

Access set of links to off-site information on alternative crops. You can select by broad crop types and filter by states where the information is available.

3. Characteristics:

List of the 2000+ conservation plant species for which the 92 extended plant attributes are populated. From this list, you can click on the plant name to access its Plant Profile.

4. Checklists & Searches:

See [Checklists & Searches](#) in "A" above.

5. Classification:

Generate a hierarchical classification beginning at any taxonomic level and moving up or down through the hierarchy. For example, an entry of *Elymus elymoides* will display all the subspecies of *Elymus elymoides*. An entry of *Elymus* will display all the species within the genus *Elymus*.

6. Culturally Significant:

List of plant species that are culturally important to Native Americans. Access the Plant Profile by clicking on a name. Culturally significant information is contained in the Plant Guide of each species.

7. Distribution Update:

Permits PLANTS users to submit new State or County records for consideration and validation based upon specimens deposited in herbaria or citations from the scientific literature. This module also has a GIS function that allows the user to pinpoint the location of the occurrence.

It also allows for the submission of observations. This portion is targeted toward weeds new to the nation, a state, or county as a part of the Early Warning, Rapid Response initiative of the Federal Interagency Committee on the Management of Noxious and Exotic Weeds (FICMNEW).

8. Excluded and Anomalous Names:

Access a list of the names that have been excluded from PLANTS.

9. Fact Sheets:

Access a complete list of the plants for which PLANTS currently exhibits a Plant Fact Sheet or Plant Guide. Click on the doc or pdf file.

10. Invasive & Noxious:

- Federal Noxious Weed list.
- State Noxious Weed lists.
- Search for plant species that are noted as having invasive qualities by selected sources.

11. Plant Materials Publications:

A search engine has been placed on indexed NRCS plant materials publications. Search by your keywords and other choices, review the documents, and then download the publications as pdf files. The NRCS Plant Materials discipline will continue to convert their publications and make them available through this venue.

12. Threatened & Endangered:

List of Federal T&E plant species by Family, Genus or State.

13. Wetland Indicator Status:

List of plant species and their USFWS wetland indicator status by Family, Genus or USFWS Region.

D. Plant Tools

Proceed back to the PLANTS Home Page and view the "Plant Tools" on the right side of the screen. This provides access to other plant-related tools.

1. Crop Nutrient Tool:

The Crop Nutrient Tool provides estimates of nutrient removal by crops at various levels. The nutrient percentages utilized in this tool reflect national averages. These estimates are used to calculate nutrient balance sheets, which are employed in the design of animal waste management systems. The Crop Nutrient Tool automates and augments the information that is currently in Chapter 6 of the NRCS Agricultural Waste Management Field Handbook.



2. Ecological Site Information System (ESIS):

The Ecological Site Description is the official repository for all data associated with the development of forestland and rangeland ecological site descriptions by the Natural Resources Conservation Service. An ecological site description is presented in four major categories:

- **Site Characteristics** - Identifies the site and describes the physiographic, climate, soil, and water features associated with the site.
- **Plant Communities** - Describes the ecological dynamics and the common plant communities comprising the various vegetation states of the site.
- **Site Interpretations** - Interpretive information pertinent to the use and management of the site and its related resources.
- **Supporting Information** - Information useful in assessing the quality of the site description and its relationship to other ecological sites.

Example: Select a state and/or a MLRA. For example State = MT and MLRA = 58A. A MLRA is an homogenous eco-region.

An MLRA map is on the Internet from the NRCS National Soil Survey Center.

http://soils.usda.gov/soil_survey/geography/mlra/main.htm

The Ecological Site Description displays a site description under the following reports.

| | |
|----------------------|------------------------|
| General | Physiographic Features |
| Climate Features | Water Features |
| Soil Features | Plant Communities |
| Site Interpretations | Supporting Information |

The site ID is based on soil type. Map locations of site IDs are available from local NRCS field offices.

3. Plant Materials:

Provides access to the NRCS Plant Materials discipline Home Page information about using plants for conservation practices.

4. VegSpec:

Vegspec is a web-based decision support system that assists land managers in the planning and design of vegetative establishment practices. VegSpec utilizes soil, plant, and climate data to select plant species that are (1) site-specifically adapted, (2) suitable for the selected practice, and (3) appropriate for the purposes and objectives for which the planting is intended. The VegSpec application has the ability to determine site-specific adaptability of plant species. Please utilize "Introduction to VegSpec" in another document.

An MLRA map is on the Internet from the NRCS National Soil Survey Center.

http://soils.usda.gov/soil_survey/geography/mlra/main.htm

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